

**Claims**

We claim:

1. An apparatus comprising:
  - a) an atmospheric pressure ion source for producing ions for delivery into vacuum;
  - b) a vacuum system housing attached to means for pumping away gas to form said vacuum; and,
  - c) a removable insert assembly which includes at least three vacuum pumping stage partitions for maintaining three vacuum stages in said apparatus when said insert assembly is inserted into said vacuum system housing.
2. An apparatus as claimed in Claim 1, wherein said removable insert assembly includes an ion optics assembly.
3. An apparatus as claimed in Claim 1, wherein said apparatus further comprises a mass analyzer.
4. An apparatus as claimed in Claim 1, wherein said mass analyzer further comprises a detector.
5. An apparatus as claimed in Claim 1, wherein said mass analyzer is configured as a part of said removable insert assembly.